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EDUCATIVE TOYS

MONTESSORI APPLICATIONS

EDUCATIVE TOYS

Being an Account of Investigations with Montessori and other Apparatus, conducted at the Fielden School

BY

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INTRODUCTION

We have planned this little volume on unusual lines, but we believe that the novelty will not be disapproved. Instead of preparing a formal account of the ideals and principles which have made the name Montessori so famous, we have undertaken the more laborious task of applying these to our own conditions at a single school, no doubt exposing our own imperfections and limitations in this school, but exhibiting, we believe, quite effectually the mode in which an elaborate educational "system" suffers change when it is handled for practical purposes. Along with the daily task of caring for these little ones, we have studied and discussed the work, exchanging views not only with our colleagues in the Seminar but with many visitors.

We have thereupon put together our

results in the form of three successive reports: the first was produced after three months, the second after six months, and the third (Chapter III in this volume) has now been written at the close of the investigation.

We publish the two earlier reports without change as they first appeared: if there is some repetition, or even some revision of opinion on minor points, we think that the reader will not suffer. He will see how theory and practice have advanced together in our minds as the investigation has pursued its course month by month.

The text of these reports has been written by Professor Findlay, but the whole has been revised by Miss Steel, who has been responsible throughout for the course of teaching as here described. In an Appendix, Miss Steel provides notes on special apparatus which we have devised, with a sketch of the cupboard she has had made to enable the children readily to take out and replace what they require.

We are indebted to the Committee of the Manchester University Press for permis-

sion to reprint Chapter I, from *The Demonstration School Record*, vol. ii (Manchester, 1913); and to *The Educational Times* for permission to reprint Chapter II, from the May, 1913, issue of that journal. This was read to the members at the March meeting of the College of Preceptors.

With reference to the toys called *Mentics*, mentioned on p. 21, we think a service would be rendered to educational research if a sample could be recovered either in Glasgow or Manchester, the two cities where the inventor was chiefly known. The inventor was G. Anderson Smith, a nephew of the well-known Unitarian minister, Dr. Angus Smith, of Manchester. Anderson Smith lived for many years in Glasgow as an Inspector under the Fisheries Board, and, in addition to much scientific work of interest, he published a lecture on this apparatus delivered before the Philosophical Society of Glasgow. We doubt if his toys possessed anything like the value which we have found to attach to the Montessori apparatus, but comparison is always valuable and helps the en-

quirer to discriminate the permanent and essential from what may be superficial or transitory.

Some of the ardent disciples of Madame Montessori may be offended at the critical spirit in which we have pursued our enquiry; but she herself, we feel sure, will welcome an effort which is all the more sincere as a tribute to her genius, since we have endeavoured to emulate her in freedom and independence, and in scientific devotion to truth. Her doctrine, her life, and the children whom she has blessed by her endeavours, alike support us in being disciples of the spirit rather than of the letter. For "the letter killeth, but the spirit giveth life".

J. J. F.
K. S.

EDUCATIVE TOYS

CHAPTER I

A FIRST REPORT (DECEMBER, 1912)

Since September, 1912, we have set aside the first hour of the school day in the Kindergarten (ages 4–6) for experimenting with apparatus either copied from Montessori models or designed on similar principles.

We have no scholars under four years of age, and this in itself makes our conclusions imperfect, since the child of two and three is more dependent upon æsthetic and motor experience than in later years. But at four and five this dependence is still sufficiently marked to enable us to observe quite decisively the relation of cause and effect in certain directions. We shall first

describe in succession what has happened, and then offer some general remarks.

The apparatus may be classified in three groups: (*a*) Educative toys, of which the solid and the geometric "insets" are good examples.

(*b*) Apparatus and exercises to help the child to independence in personal habits, e.g. the frames for tying and buttoning.

(*c*) Apparatus to facilitate learning the tools of culture, viz. mathematics and language.

(*a*) *Educative Toys.* In placing an educative toy before a child the capital difficulty is to determine whether he "needs" it at the time. Very often he cannot find out until he is shown what to do with it; thus we let three boys have solid insets; they proved to be too old to care for them and presently wanted to "play shop" with them! But a younger child, less developed, is now happily occupied and is learning much from them.

The purpose of these toys must be clearly recognized. They are not designed,

as are the Froebelian gifts, to enable the child to construct buildings or represent imagined forms, but the end of the "play" is achieved merely by sorting out, placing and replacing, in accordance with the conditions which the toy itself presents. The theory is that the child finds satisfaction (1) in achieving this end, (2) in repeating this process many times. The satisfaction is due to his desire for better mastery of the shape and size of things; apparatus specially selected is necessary, because he cannot alone get hold of things which he can compare and arrange.

This view is not taken (at any rate by us) as covering the entire attitude of the child towards external objects. Very often, as in the next type of activities which we discuss, his delight is found in the actual doing of enjoyable acts, with no distinct intellectual element; and at a younger age the infant in the cradle is satisfied with play which is apparently aimless.

In addition to the insets we have tried with success a collection of seeds (Indian corn, sago, &c.) of about the same size but

different in shape. These are thrown together in a bag and the child picks them out, sorting each kind of seed into a separate box—first with eyes open, afterwards blindfolded.

In watching the children it is very evident why Madame Montessori blindfolds the children so often—the sense of touch is seldom, under ordinary conditions, relied upon alone either by adults or children: the eyes help the fingers. Hence, we provide a situation where the child is compelled to achieve his result without the aid of eyesight. Here is a capital point where further investigation is required, for it is difficult to determine how far we moderns lose by being allowed to abandon so largely our resources in the sense of touch. The practical difficulties involved in blindfolding a child are real, but can be overcome. We are using linen eye-covers fastened with elastic. These can be easily washed. Each child has his own pair, which are marked with his name. They can be provided by older scholars as an easy exercise with scissors.

At this point let us note generally that the value of all this apparatus will be greatly enhanced if, whenever possible, it is made in the school. The handicraft classes of our schools, from ten years old and upwards, are sometimes at a loss to know how to employ their energies. Boys and girls will willingly make educative toys for their little brothers and sisters if provided with a model.

We have sought to find apparatus which isolates the sense of touch from that of sight without requiring the eyes to be covered, and the following has proved of interest (its value may be tested by adults as a "parlour game"): A series of buttons or button-moulds, identical in shape and material but graded in size, are procured; the shops supply five sizes, but three are enough to begin with. Place half a dozen or more of each size in a small bag with a mouth large enough for the insertion of one hand. Put five little boxes (matchboxes are quite convenient) around the operator, each box to receive only one size of button. Place the boxes well apart from

each other in a semicircle. Then require the operator, holding the bag in one hand, to take out one button at a time with the other and place it in its right box. He feels each button while in the bag, but must not look at it when taken out, deciding which box claims it *before* he takes it out. Some operators do better with the left hand, others with the right. If button-moulds are used these may be placed on small spikes, and the operator should then see at once if he has made an error. Two children enjoy playing this game together, one operating, the other checking. With a little ingenuity, puzzles of the jig-saw type could be devised which in the same way would compel the operator to rely on his fingers.

Thus, under the heading of Educative Toys, we have used Montessori cylinders, geometrical and solid insets, seeds and buttons in graded sizes placed in bags, and the coloured tablets of graded shades. These last have only been introduced recently, but already they are proving effective. It is clear that some young children

enjoy colour, and can master discrimination of such exercise with ability at least equal to that of adults. It may or may not be true that this "toy" helps the child to become an artist. We are not concerned with such eventualities. We are satisfied when we find that it aids the development of the child at this stage by enlarging his experience in an important field. We think that other material may be devised, in place of the silks, more suitable for our smoky atmosphere, as well as less expensive than the tablets of Madame Montessori.

She has also a variety of apparatus for exercising discrimination in sound, smell, and taste. We have imitated some of these and given them to the children; they are, however, more difficult to work, because they do not afford an easy means of occupying the child for any length of time with a purpose which he can achieve. All he can do, e.g., with a set of bottles containing coffee, sugar, salt, &c., appears to be to taste or smell them and mention their names. Perhaps in an orthodox Montes-

sori school more than this is achieved, but *The Montessori Method* does not offer further guidance. This is interesting and useful so far as it goes, but a child cannot be left by himself to this exercise. Froebel recommended the use of objects for taste and smell, which are extensively employed in Kindergartens in connection with action songs or games; but in such a social, collective "lesson" the opportunity for sense-discrimination is diminished, and this plan is in sharp contrast to the isolated, individualistic method of Madame Montessori. The best of the Montessori toys (from the point of view of her theory) are undoubtedly those which answer their own questions.

It must not be assumed that we are depreciating the Montessori apparatus by employing the epithet "toy"; it is the appropriate term, since all the activities of this period of life are on the plane of play, and the "toy" is the apparatus of play. This gifted Italian lady is by no means the first who has sought to devise educative toys, calculated to appeal to one or other

of the senses. In Manchester, e.g., forty years ago, a series of toys called *Mentics* were constructed and used in many families with the same end in view. We are making enquiries in the hope of recovering a set of them. Many toys are, of course, not educative, i.e. they are not designed for anything beyond amusement. Some, of which Froebel's gifts or a Noah's Ark are good examples, allow scope for constructive imagination, in contrast to the Montessori material, which can only achieve one definite end and have more of the nature of mechanical toys. Meanwhile the term "toy" may serve to cover all apparatus appropriate to the "nursery" stage of life.

(*b*) *Occupations Involving a Social Purpose.* Our most immediate and satisfactory experiment so far has been with the frames for tying ribbons, &c. Our children, like all others, are pulled in two directions: on the one hand they have instincts of self-assertion and independence; on the other hand the kindness of their elders, teachers as well as parents and sisters, is often overdone, so

they are waited upon far beyond the age when they ought to be caring for themselves. Not only is moral development thereby arrested, but physical and mental development also, for the adjustments needed in tying a ribbon or buttoning a shoe are just as important as those involved in arranging a set of insets; indeed, it is obvious that they are more important. Now the genius of Madame Montessori is here shown in meeting the child halfway. For example, in buttoning his own shoe he has to stoop and strain; very often he has to hurry; the adjustment of hands and fingers are thereby hindered. So we provide him with a row of buttons on which he can practise these adjustments at his leisure and with plenty of repetition. If to adult readers this appears to be a trivial matter, unworthy of scientific attention, we can only reply that the acquirement of moral habits is as necessary as the removal of adenoid growths. We have used seven "frames" similar to those described in *The Montessori Method*—leather and flannel buttoning, hooking, lacing, tying, and

"patent" fastening.[1] The benefits here were quickly realized by the children, and we were soon convinced that such apparatus enables them to become independent in dressing themselves much more quickly than by having dolls to dress. The little child is satisfied with the repetition of the act twenty, forty, sixty times. He does not need the "purpose" of a doll's boot to button in order to secure this satisfaction; his muscles and nerves need to practise the adaptations of buttoning and unbuttoning in isolation from any other stimulus. When the adaptation is achieved he then reverts with joy to the practical situation presented by his own clothes and his own feet, and, if you let him, thereafter to the needs of any other child who has not learned this personal independence.

Another type of habits which is made prominent by Madame Montessori is concerned with cleaning and washing. In this field she has been anticipated by some of the followers of Froebel; thus, in the

[1] We have found it helpful to add three frames, specially suitable for boys' clothing and boots.

Sesame House School (St. John's Wood, London, N.W.), which carries out the methods of the Pestalozzi-Froebel Institut in Berlin, methods have long been in vogue which are similar to those described on pp. 122, 123 of *The Montessori Method* (see reference, p. 46). In the Fielden School we are now permitting our children, from the youngest age, to share in these domestic activities, for these are general principles, which apply equally to the younger as to the older children, when due allowance is made for their more limited range in capacity and endurance. Our experience, too, confirms the value to the carriage of the body and to general muscular control which comes from carrying basins of water, bowls, &c.

(*c*) *The Foundations of Language and of Mathematics.* It is too commonly the case that an inventor achieves public applause, not because of his most valuable work, but from performances of inferior value which happen to please the uninstructed. We hear that the Syndic of Rome has encouraged the Montessori Method in the

schools of that city because thereby a full year of school time can be saved. The children, he says, will now be able to leave school and go to work earlier than heretofore, because they will have fully mastered the three R's at ten or eleven, instead of at twelve or thirteen. In England the situation is regarded differently; teachers are by no means inclined to press letters and books on the child's attention at a precocious age. On the other hand, normal children by the age of five have come to realize that the mysterious symbols of the alphabet possess meaning to their elders, and *if* their curiosity leads them to investigate this meaning there is no reason why they should be hindered from satisfying the instinct, in the form of congenial play.

We have not hesitated, therefore, to hand to our children of five the sandpaper and cardboard letters of the Montessori type, and also sandpaper figures from 0 to 9; also the geometrical insets which give them motor experience of rectangular forms  . To these we have added a set of cardboard dominoes, which have proved

from exploration and adventure. Language is all about him in a modern town, and he will read the large lettered signs on shops before he tackles the pages of a book The same is true of numbers. Our intention was merely to introduce the children to the symbols, but they themselves acquired an interest in addition, stimulated no doubt by a little exercise in playing with bean bags, ninepins, &c. The result is that already the five-year-olds are able to write correctly on the blackboard the result of 2 + 7, 9 + 5, &c.

We may now discuss some of the principles at issue in these occupations.

1. *Freedom v. Discipline.* We cannot here attempt to examine the doctrine of "freedom" which *The Montessori Method* expounds, for it leads us directly to fundamental aims which government and people profess in establishing educational systems.[1] We think the author, in her desire to show the difference between her system and the public system of Italy, exaggerates the

[1] See *The Demonstration School Record*, II, p. 4; and Findlay, *The School* (Home University Library), pp. 54 to 60.

amount of liberty which she permits to her children. They are evidently allowed a certain freedom of choice, day by day, between certain pieces of apparatus, but the "Directress" has a graded sequence in the apparatus extending over five years, and one must assume that her directions extend, if not to compulsion, at any rate to very strong suggestion in the case of a child who needs such stimulus. We mention this point, for it is one which will certainly prove embarrassing to English teachers who try to copy the Montessori System in detail. We have in England a type of child which probably does not present itself so commonly among the class of children described in that book, viz. the child of lethargic temperament, whose lethargy has been encouraged by the mistaken indulgence of parents, so that he is quite satisfied to sit half an hour playing with a frame or with seeds, but for the most part finding satisfaction in looking around, vaguely and aimlessly. Now to allow "freedom" to such passive, inert natures may be to check the possibilities of active progress in later years.

We take it rather that the freedom advocated on this system is (1) freedom from the class. The individual finds freedom and self-control by working alone or with one or two companions who choose to join him; thus he develops at his own pace. (2) Freedom to finish his allotted task at his own pace; in other words, the individual is permitted development in isolation.[1] No words can be too impressive to describe the importance of this reform. How far Froebel really meant the infant to have this freedom it is difficult to say,[2] but it is certain that in adapting the Kindergarten theory to "school" conditions most infant teachers have assumed that children must be "taught" simultaneously, and that the isolated, separated activity of the child can be sufficiently cared for away from school.

[1] *The Montessori Method* (pp. 103–4) uses the term "isolation" in another sense, as a mode of punishment: in solitary idleness. A child can enjoy and profit by occupation in isolation or detachment, without the feeling of loneliness. On p. 179 the term "isolation" is used by the translator in another connection—isolating the use of one sense, *as an individual.*

[2] In many of his writings it is clearly the single child playing alone or with the mother that he has in mind.

This leads to a question of organization which we discuss below; meanwhile let us note the result of our own observation, since we permitted this freedom in the Fielden School Kindergarten. We find quite a striking change in the children's behaviour. Formerly they were permitted each morning a period of what was called "free play", during which they could romp about and enjoy themselves, but usually this period was merely an occasion for the flow of boisterous spirits; now each one goes at once to the apparatus cupboards, takes out the "toy" which is engaging him, and starts to "work" on it. Although we speak of "work" to the child, these occupations are regarded as play, simply because he is let alone to play by himself, and to choose his plaything. The restless atmosphere of social excitement has disappeared, and they evince no desire to have a period for "free play", i.e. romping. The children are quite as happy, but they are more self-controlled. Now, while the teacher thus becomes (as Madame Montessori so finely

describes) a director and observer, detached from active interference, she is still in place as an elder friend to whom the child appeals for approval, sympathy, and advice. For while this isolation is, as we believe, necessary, it does not thwart the social instincts which lead the child, *when he feels the need*, to turn to the teacher and also to his comrades. This last is equally important and should not be repressed. Thus E (aged five) one morning asks if she may go and help G (aged four), for "I'm sure he is not doing the dominoes right". The result was that G, after being helped for three-quarters of an hour by E, successfully managed to sort out the 3's and 5's into the envelopes. Thus the permission to choose freely results not merely in the isolated mastery of apparatus, but in a free choice as regards social co-operation.

2. *The Meaning of "Sense-Training"*. Some of those who are writing on this Montessori System are falling into an error similar to that which beset the Sloyd pedagogy of thirty years ago, with its jargon of faculty-psychology. It is supposed that

there is some specific quality or power to be cultivated by Montessori exercises, which will function in later life as power in the hands and finger tips. There may be real scientific foundation for this view, but if insisted upon it leads one astray, for it misses the real issue and exposes us to the very just criticism that many adults in modern times do not require to be expert in the finger tips, but to be able to use language and science. Hence it seems better not to speak of "training" at all, but to assert (what is patent to anyone who watches these infants for psychological purposes) that they are *learning their world* by means of direct motor and sensory experience. They, like ourselves, want to enlarge experience[1], to discriminate, arrange, interpret their *cosmos*; and whereas in later years man achieves this by language and thought, the infant relies on direct sense-perception. Thus the employment of educative toys is justified, not as a preparation of muscle and nerve for *future* benefits, but as a means of living and developing

[1] See *The Demonstration School Record*, p. 40.

wisely at the moment. The "world" which the infant has to master is concerned with the height, weight, texture, colour, shape, of material objects; he discriminates and compares on the perceptual level. Failing ample opportunity for such employment during infancy he cannot with complete success achieve the higher level of mentality in later years. Let it be borne in mind that the modern child, especially in cities, with artificial light, artificial culture of all kinds, is deprived of much of the simple material, much of the reliance on tactile experience, which his predecessors found to hand in earlier times. Instead of promoting this normal development, modern civilization, with its schooling, has tended to arrest it; thus the invention of educative toys is justified to redress the balance. Hence also the importance of grading the exercises (see *The Montessori Method*, chapter xx). Failure is sure to result if a teacher sets a child to work at a toy which is either too difficult or too easy for him. One morning, e.g., we gave the geometric

cylinders to some older boys; in a few minutes they had fitted them into their places and then proceeded to play shop with them, as we have noted above.

3. *Organization of the Child's Time-table.* Our experiment since September has satisfied us that in each of the types of activity mentioned above useful occupation can be afforded to children, i.e. (*a*) they can well spend time at least from the age of three on educative toys; (*b*) they can, and should, be engaged in domestic activities; (*c*) from the age of four or five they can engage on apparatus which has distinct relations to the acquirement of mathematics and language.

But we are now presented with time-table difficulties. A Montessori School in Italy appears to extend from 8 or 9 a.m. on to 5 p.m., whereas an English Kindergarten stops at noon, and even the Elementary Infant School only affords some four and a half hours. Further, we are not likely in England, however enthusiastic we may become for the Montessori pedagogy, to drop collective teaching in

the form of song, story, game, and Nature study. It is difficult from *The Montessori Method* to make sure whether Madame Montessori would approve of any form of social, collective teaching for infants, but if she disapproves we are not prepared to follow her. We cordially admit the value (for moral as well as intellectual development) of the Montessori apparatus, but our children still wish to sing and play together, to hear a story and exchange ideas in company about the natural world, and to play with toys which give scope for constructive imagery. But the practical difficulty is at once presented—how to find time for these new occupations with Montessori apparatus and in domestic activities during the short school day. As regards the Infant School the difficulty is not so great, but in Kindergartens, where only a morning session is allowed, the problem seems insuperable. And it will prove to be so unless we recognize that the infant has his life to live in the afternoon as well as the morning, and that his elders at

home are as interested in his welfare as is the professional teacher. This consideration is of special weight because the freedom and isolation required for success with these toys can be equally well secured at home as at school. Hence we anticipate that among English-speaking people (and with these, German homes should be included), where family solicitudes and obligations are esteemed, the success of "Montessori" will depend partly upon co-operation between school and home. The teacher will begin to interest the child at school; then she will communicate with the parents and induce them to carry over the same occupations to the nursery, so that the child may continue his development for many hours in each week. We need not dwell upon the many benefits which will accrue to all the three parties concerned if this prove to be the outcome of the study of the Montessori pedagogics. Teachers and educationists often complain, sometimes with justice, of the indifference displayed by parents to the efforts of the school. This indifference,

however, is not always so intended, but is rather a shrinking from intruding on the technicalities of our scholastic cult. In this case, however, there is no great difficulty or mystery; it only requires reasonable care and attention to see how this apparatus is employed and then to give direction as needed. Of course we do not for a moment deny that the best of skill is requisite for a proper grading of the toys so as to adapt them to each stage of development and to the distinctive power of each infant. It is here that the advice of the expert teacher, who has a number of infants under observation, is invaluable. She allots some time each week to Montessori occupations, observing and grading the children; then, on the basis of her experience, the folks at home can continue to educate the little ones, replacing the useless toys at present supplied from toy shops by material which is both attractive and educative. Thus, when teachers have secured the requisite skill, we anticipate that they will do much to guide parents in directing the play of

little children with Montessori or similar material.

This co-operation can be extended yet further. We have recently (see note to p. 28 above) given our girls of 14 or 15 an opportunity of spending a morning with the little ones, to the benefit of both parties. There is no reason why boys and girls should wait till they become fathers and mothers before they take an interest in little children. Much is now being said as to the preparation of girls for domestic careers, and they are being provided in some schools with life-size baby dolls to wash and dress. It would appear more rational to let them actually help with the infants at school as well as at home. Thus, where an Infant Department makes too great a tax upon the energies of its teachers, why not permit three or four girls to come for a day in each week from Standard VII and help to direct the little ones, both in the use of the educative toys and in the social activities? This would not be defended as a saving to the ratepayer's

pocket, or as a return to discredited monitorial systems, but as a simple recognition of the practical sympathies and relationship that exist under natural conditions between elder and younger children.

4. It will be seen that our endeavour throughout this investigation has been to separate what is general and universal in Madame Montessori's work from what appears to us as specific and narrow. To carry out her "system" in detail demands, it would appear, a body of teachers trained exactly to copy her plans and reproduce her idiosyncrasies in detail. Now, while we should ourselves esteem it a great privilege if we had the opportunity of working for a time under her guidance, we are surely right in seeking to follow the spirit rather than the letter of her system. Our own freedom from pedagogic shibboleths compels us to be free in our criticism, and we feel sure that the breadth of her own conception will lead her to welcome liberty in her fellow teachers no less than in children. Hence, finally, we shall hope to see these prin-

ciples applied quite freely by teachers in planning many varieties of toys and apparatus. But it would seem, from what we read in the pedagogic press, as if every teacher or school authority will be expected to procure a complete Montessori outfit (costing £10 or £16) before the principles of this new method can pretend to be put into practice. Now, if this is the case, a grave error will be committed; some of the apparatus will be found to be admissible, and this should be exactly copied; others, we are convinced, can be greatly improved. We have ourselves ventured to devise apparatus, and have mentioned above examples of two kinds which are not to be found in the Montessori répertoire at all. Furthermore, it is greatly to be desired, as we have pointed out above, that the schools should make their own apparatus. This resource is, of course, not always to hand, and some of the toys must certainly be provided by manufacturers and placed on the market.

Hence, in this as in all other features of the education of infants, success will

depend, not upon the pedantic reproduction of devices, whether called Frobelian Gifts or Montessori Apparatus, but upon faithful study and observations of children, by teachers who combine a reverence for these great reformers with a spirit of freedom and independence.

For these reasons we greatly deprecate the mode in which the American "entrepreneurs" of the System are seeking to protect their rights. The firm in New York City called *The House of Childhood* issues a catalogue, which reads as follows:—

The Montessori Didactic Apparatus has been patented, and other applications are pending: Infringers and imitators will be vigorously prosecuted.

Warning.—The Montessori Didactic Apparatus is not a set of separable toys. It is a system for sense-training, and while the sequence is not dogmatic it should be presented to the child in a regular order. No real educational end will be attained by a random use of isolated parts. The materials are largely self-corrective, but not "auto-educational" in any sense, meaning that the system

does not require careful teaching. These materials should not be purchased by anyone who does not intend a careful, intelligent use according to the principles of the Montessori Method. Any materials used in the right spirit are better than those used in the wrong spirit.

Now, it is quite right for an inventor to reap the fruits of experiment and labour extending over many years, and where a piece of apparatus or material can be properly protected by patent no one can object. But principles of development cannot be patented, and it is foolish to attempt to dissuade teachers from experiment, by "warning" them against freedom and selection from among the various toys in the Montessori catalogue. In spite, therefore, of Madame Montessori's "request", as stated by these manufacturers, that "the apparatus be kept together as a complete method or system", we respectfully submit that the wiser course is to leave each piece of apparatus to justify itself, and, further, to permit room for adaptation and improvement. In countries

such as England and America, where teachers are allowed an increasing measure of freedom and initiative, this is the only course that can hope for success. However generous Educational Authorities may prove to be in purchasing the complete outfit, it is certain that teachers of experience will only employ so much as they find of service, and the rest will lie in the cupboards. We venture to offer this note of warning in the interests of the system itself.

We have no desire to engage in the lively battle now proceeding between Montessorists and those who regard the System as an eccentric innovation or as an impertinent reflection upon the teaching now given in our Infant Schools. This controversy seems to us of quite minor importance; in other professions discoveries are constantly being reported from all parts of the world, and professional men are invited to investigate, to criticize, adopt or reject without regard to the personal prestige of earlier work. It is, for example, no disparagement to Froebel's reputation or

to the English Infant School, to believe that in *The Montessori Method* there are new ideas which demand investigation. The enquiry which we here report is merely of a preliminary nature, and we present it, not as a final verdict of "yes" or "no", but as a modest example of the mode in which we are seeking to discharge our obligation as students of children, and in line with the other contributions which issue from the Fielden School. Without endorsing the excessive claims to magical results made by Madame Montessori's publishers in advertising *An Educational Wonder Worker*,[1] we are satisfied that important principles of infant development are being applied by this "reformer" with great skill, and that these merit both genuine respect and patient investigation.

Nor should we omit to point out that *The Montessori Method* is of real importance as a contribution to pedagogics quite apart from the system which it advocates. There are many passages of rare insight and feel-

[1] See the pamphlet sold under this title (price 20 cents, *House of Childhood*, New York City).

ing which display Madame Montessori as a thinker of the first rank, with a mastery not only of apparatus for infants, but of ideas and experiences ranging over the entire life of the young. From this point of view her work is worthy of being carefully studied by all who are concerned with educational ideas, whether or no they are directly engaged with little children.

References.—The Bureau of Education has just published a full bibliography of literature bearing on this subject (*Bulletin*, 1912, No. 17, Government Printing Office, Washington, U.S.A.). We need not give a list of the various papers, mainly of a controversial nature, written during the last twelve months on "Montessori", for none of them contain accounts of actual investigations with children. The only exception we have encountered is in *Primary Education*, vol. xxi, No. 1 (Boston, U.S.A., January, 1913), an article by Miss L. Theresa Benson, entitled "An Experiment in Montessori Work". Her report affords useful comparison with our experiences. Miss T. L. Smith, *The Montessori System* (Harper Brothers, New York), records merely an experience with a single child. It is fair to add, that while these experiments reported from America are favourable, a committee of experts sent from Teachers' College, Columbia University, New York, to Rome, in order to investigate Madame Montessori's results on the

spot, have reported unfavourably; their criticism, emanating from so responsible a quarter, will be awaited with interest.

A Montessori Mother (London, 1913) can be highly recommended as giving a very clear account, not only of the system, but of the philosophy underlying it, and its relation to the Kindergarten.

The Montessori Principles and Practice, by Professor Cuberwell, of Dublin (G. Bell & Sons, 1913): a sympathetic criticism of the "principles which underlie the practice".

CHAPTER II

SECOND REPORT, WITH DISCUSSION OF MENTAL PROCESSES

(This chapter is reprinted as published in the *Educational Times*, May, 1913. It had been previously read at one of the Monthly Meetings of The College of Preceptors.)

It is not necessary, in addressing a society of teachers in London, to describe the principles expounded by Mme Montessori; not only have you had a number of meetings where the pros and cons of this work have been vigorously argued, but it was one of the chief items in a rich bill of fare provided by your Education Authority in January.[1] Coming from the north, one can only congratulate London teachers on being able to produce papers of such high quality as those concerned with the Montessori pedagogy, as well as with other matters of great moment at the present

[1] Conference of Teachers, 1913. (1*s*. 6*d*. P. S. King & Son.)

time. Nor do I think it very helpful to contrast Montessori with other great teachers, such as Froebel. There should be no question of rivalry or partisanship; to understand exhaustively the ideals and practices either of the German or the Italian we need to realize the environment of race and culture in which their systems have evolved, and then to sift out the universal and permanent from what is ephemeral and local. Froebel's pedagogy has suffered great transformation since the days when Frl. Heerwart and Mme Michaelis first landed in England; it is no disrespect to their memory or his if we hold ourselves open to new revelation which will confirm the foundation on which they built. Indeed, this transformation has already been begun as regards the Montessori system also. The remarkable book just published by Mrs. Fisher,[1] as well as the papers at your London Conference, show that the time is now gone by for any new "system" to be imposed in all its details on the teaching body with-

[1] *A Montessori Mother.* London: Constable.

out discrimination or the exercise of private judgment.

You will probably be aware that the Fielden School, among other purposes, is designed for the investigation of teaching problems. It is one of the functions of that institution, when ideas of importance are brought to our notice, to examine them, and if they appear *a priori* to promise a fruitful field for practical investigation, we are bound to do our best to make a fair trial, provided that our resources in staff and equipment are equal to the task. Now it seemed to us, on reading *The Montessori Method*, that a clear case for investigation was made out, and our duty was plain. We have a class of scholars under six years of age, which we call the Kindergarten; and the Senior Mistress of our Primary Department, Miss K. Steel, takes special charge of this class, bringing to her work a trained familiarity with Froebelian and infant-school methods both in theory and practice. She has one, and sometimes two, assistants to help in the kindergarten, and as the class does not

number more than twenty it is possible to make studies of the progress of individual children. I mention these circumstances because they are necessary as conditions for a fair investigation. You cannot "try" a new educational scheme offhand as you can try the effects of a new drug. Miss Steel was not only convinced that this investigation was worth while, but had behind her a ripe judgment and experience with children, as well as the energy and devotion necessary to carry on the investigation from month to month, varying and adapting as circumstances demanded. It ought, perhaps, not to be necessary to make these personal explanations, but little seems to be at present understood as to the nature of this sort of scientific investigation, and I am sure that critics will ask the questions which I have here anticipated.

Let me make it quite clear as to what we intended to investigate. We were simply concerned to find out whether, by following some or the principles expounded in *The Montessori Method*, using

the same or similar apparatus, our own children would appreciably benefit; and this enquiry involved our noting their reactions, and judging whether Montessori interpretations of child behaviour are confirmed by our observations. It will be seen that we are not concerned to report as to whether "the system", or any part of it, can be adopted by any school or any teacher. That is another problem on which our investigation may, or may not, throw light. It will only help teachers and schools elsewhere so far as it convinces them that we have faithfully interpreted the powers and behaviour of children. When such an interpretation is accepted, then the special adaptations in this or that school, with this or that teacher, will follow their own course.

Our children were not introduced to the entire Montessori apparatus all at once. By the kindness of the Froebel Institute samples of the frames for buttoning and tying were lent to us; these we had copied, together with the cylinder insets: we also copied the sandpaper and other alphabet

forms: and we ventured to devise some exercises with dominoes and buttons that are not in the Montessori répertoire. This constituted our entire stock-in-trade up to Christmas. Only last month have we been able to equip ourselves with the complete outfit, and with large cupboards specially designed by Miss Steel for easy access by the little ones. Now I feel sure that it was a great advantage to the teachers, if not to the children, to have to begin with only a small part of the equipment; for each piece of apparatus needs to be studied by the teacher and its use by the children observed and analysed. In our case, at any rate as regards the frames, important modifications were found necessary. For one thing, Italian and English children do not dress alike, and since the frames are directly designed to achieve an immediate outcome in personal independence, it was obviously necessary to choose materials such as these little girls and boys find in their own dress.

At first, there was some uncertainty as to the amount of time to be assigned to

"Montessori", but after some trials the regular kindergarten morning is now conducted to a time-table roughly as follows: The kindergarten room, being the largest room in our house, is used for the daily morning gathering of the primary department at 9.15. When the other classes leave this room the kindergarten children stay behind for a "Morning Talk" for a few minutes. After this, the youngest of them go to the Montessori cupboard to find the "toys" which they wish to select, while the elder ones get out the tables (low collapsible tables specially made to suit these employments) and a rug to spread on one part of the floor. These, then, go to the cupboard and take what they require, and very soon all are busy. The cupboard is divided into three portions, in successive grades. Until the teacher divided the children and the apparatus in this way there was too much freedom in selection. If children get hold of a toy that is unsuitable, they soon show that they are bored with it or they misuse it (see *The Montessori Method*,

chapter xx). No orders are given; each child knows that he is allowed to choose any toy in his own cupboard. Having chosen their toys, they go to a table or sit on the floor (a rug is provided to lessen the noise when using the Long Stair or the Tower). They pay no attention to the teachers, who sit down and note what goes on. After a few minutes a child may find his toy (we call all this apparatus "toys", for these children live a life of play-activity) unsatisfactory. He is at liberty, within limits, to change it, but the teacher satisfies herself that the child understands what should be done with the toy before it is rejected. Some children will come to a teacher with pride and show her when they have completed a frame or filled envelopes correctly; others are not so communicative. Some spend the whole time on one employment; others take many days before they can steadily pursue one idea through. But a month is a short span in the child's life: we should give him time!

10.15.—A bell rings; a little time is

given to gather toys and put them away; then they fall in line, march out to the transition room, where they take their lunch (the children bring their own food). Here is a note written by a student (an experienced teacher), observing their proceedings at lunch: "Cups, plates, milk, or water are distributed by monitors, and an orderly and pleasant time is spent. The well-controlled movements of the children are again noticeable; small children of five years pour out milk from a rather large jug into tiny cups without spilling a drop or shaking. Again, in washing up, these children carry enamel bowls full of water without spilling any."

10.50–11.—After ten minutes' romping in the garden, they come back to their own room and quietly lie down on the floor wherever they please. They shut their eyes, and some fall asleep. After five minutes' rest, the teacher very softly calls the name of each in turn. [We are not enamoured of the semi-hypnotic effect which Mrs. Fisher describes; it *may* be all right, but such extreme effects seem

to us to be treading on uncertain ground.] When called, each child rises with most careful quietness, so as not to disturb his neighbours. One or two are asleep; if they do not respond to the call they stay where they are. This ends the distinctive "Montessori" time. All except those who are sleeping join in a collective lesson in some "occupation", followed by kindergarten play. When noon arrives the children are off to the cloakroom. Until recently mothers or sisters met them as valets in the cloakroom. But the frames have done their work; both teachers and scholars are now—most respectfully, of course—asking these fond relatives to cease their attentions!

The kindergarten does not meet in the afternoon: hence these scholars are under our charge only for some fifteen hours per week. Thus, from these, ten have been allotted for some five months to employments which may be called "Montessori".

Before proceeding to report results, I may be reminded that this allotment of a short ten hours per week is entirely

inadequate, for in Rome the entire day is taken up with these pursuits. The devout Montessorian may perhaps hold that our proceedings should be condemned beforehand on this account. Now, if we had set out to subject these children to an absolute scientific experiment, akin to work in a laboratory, this criticism would be quite in place. Such an experiment requires a "control" test for the purposes of strict comparison; it requires also conditions absolutely identical with those laid down in earlier experiments; in short, it requires conditions that can never be fulfilled in so-called educational experiment. [I have never used, and think it unwise to borrow, the term "experiment" from natural science for the purposes of schooling; and I regret that the Training College Association, by the title of its journal, has given countenance to the idea.] All that we can do is to "investigate"—i.e. to give to new doctrines and apparatus a fair trial, under such conditions and modifications as seem to us just and reasonable. It is open to anyone to say that our conditions were

not just and reasonable, and that our results are not to be accepted. But my point is that in schooling you cannot, with the best of goodwill, conduct precise quantitative experiments, repeating exactly the plans of the original operator; you must make such variations as, in your judgment, are likely to answer the purposes of your enquiry. If we had been able to bring these children back in the afternoon, and help them again to play with these educative toys, I think it is very likely that some of them would have been much the better for it; and our report of results would in that case have been more emphatic; but the fact that we could not imitate Mme Montessori in that particular does not invalidate our report so far as it goes. Moreover, Miss Steel might have dropped the Morning Talk or the Collective Lessons and let the children continue their individual employments the entire morning; but we were satisfied that we could judge of the worth of these new ideas if we gave them a trial in the first part of the morning. In other words, we planned this investigation with due regard

to what we believed, in the exercise of our independent judgment, to be best for these children. The "collective" teaching of the regular kindergarten type has been abridged, but by no means abandoned. Nothing that we have heard or read of this new system leads us to "scrap" the pedagogy of Froebel; rather, we think that Montessori has come "not to destroy, but to fulfil".

In order to secure definite records of results, Miss Steel and her assistants have kept a diary of each child in a separate file, recording as far as possible the apparatus selected day by day, with notes of definite changes in behaviour and suggestions to account for these. In addition, more general impressions have been written at longer intervals. An account of the home life and health of each scholar has also been prepared. Space and time will not permit me to give these reports in detail. I must ask you to take my account as an impartial conclusion from these papers, helped out by my own observation of these children during the past five months. It should

be borne in mind that none of the persons, including myself, who are concerned in this investigation had any bias towards a favourable conclusion; our prejudice, if we had any, was rather the other way, for the extravagant and pushful methods adopted by the magazine articles which first exploited the system by no means recommend it to cautious students. Our general conclusion is undoubtedly favourable, although our "results" will no doubt appear quite unsensational by comparison with the account from Italy. The report I now give has been prepared after reading through the diary records of each child, in addition to my own observations of the children's reactions and further enquiries from Miss Steel. I analyse the result under a series of headings which appear to include the most important topics.

A.—Initiative

Generally speaking, all the children are exhibiting two contrasted qualities to a degree which we had not witnessed in similar children before this change in their

life was introduced—viz. a growth in independence and initiative, side by side with a quieter demeanour and more consideration for others. It would appear that these children really needed to be left alone, not only for cultivating what is called individuality, but for the mental repose which seems needful for adjustment to the social *milieu*. At first, each child played repeatedly with a toy of his own selection; but they soon begin to observe each other, to exchange experiences and gradually come to help each other, both in play and in the practical affairs which each morning's experience brings to their attention. Independence has been naturally most manifest to the observer in the cloakroom, as the outcome of exercise with the frames. This may seem a small matter to outsiders, but our records show that to these children the achievement is a great event.

B.—Repose

It will be seen that this self-direction is concerned not only with some freedom in choice of apparatus, but in the time spent

upon it. In collective teaching all must go at the same pace, or drop out by inattention. Here the slow child can go slow, and achieve the desired result on his own plane. The result is repose and steadiness. All the teachers, as well as some mothers, comment on the increased quietness in the general atmosphere; the little ones go about their business with less excitement, but with equal joy. Further, little children vary from day to day more than adults; weather, food, a bad night's rest, all tend to vary the power of continuous effort, especially with children whose health has been irregular in infancy. The daily records show this variation in a striking degree; and this isolated activity allows scope for it by permitting each to proceed at his own pace.

C.—Attention

The possibilities of mental progress depend very largely on the growth of power for sustained and absorbed attention. There are at least three sharply contrasted types among these children.

(1) The child of dreamy, introspective temperament. In class teaching such a child, usually shy and retiring, gets left behind; and in the nursery he will often be allowed to grow lethargic because he is so willing to be good! Now, such cases require the stimulus of a purpose to be achieved on the level of sensory-motor activity; when such children realize this, and find the pleasure of achievement, they revert to it again and again; gradually they emerge from their apparent dullness and find new pleasures in life. The record of one case —"T. S."—illustrates this type admirably. For many weeks all he seemed to care for was "the laced-up thing", or some other frame. These are still his favourites, but he is gradually overcoming his shyness with his comrades, is ready to join them with other toys; and his demeanour shows an alertness and interest which previously had only been manifested in the home circle. This type is quite capable of sustained attention, but the shy nature is inhibited in class teaching. (2) The child who is *really* lethargic, and will be quite satisfied to sit

aimlessly with a toy and achieve nothing. In such cases the principle of non-interference, as it seems to us, can be carried too far. When it is quite clear that the listlessness is not due to ill health or to inability to understand the purpose of the toy, then the teacher is surely justified in using personal influence to induce activity. With patience such a case is remedied, for the normal tendency of little children is towards achievement. As soon as success has been reached by such a child a few times, the power of sustained attention grows of itself. Here again the opportunity for isolated effort on a suitable problem seems to be a necessary condition for development—a condition impossible to arrange when a class is taken collectively. (3) The contrasted type is much more common; it is the volatile, and distracted. "E. B." has presented a capital example of this: full of assurance and independence, but with little staying power. The mind is full of fancies (fostered by attendance at the picture house in these days!). These educative toys answer capitally in such a case,

for the child is compelled to solve the problem each toy presents. Of course, the teacher has to interfere when "E. B." uses the Broad Stair to make a ship with funnels instead of a stair; there is a time for ships and funnels, but also a time for counting blue and red steps. "T. S." and "E. B." do best when they work together: the one is sociable and volatile, the other shy but steady. The habit of attention seems to be fundamental as the starting-point for further intellectual development: hence the progress here made seems to be conclusive.

D.—Moto-sensory Experience

While admitting the benefits of isolated activity, a critic may, however, enquire whether this fundamental power of attention might not be equally well developed in other employment. Our answer is, "Yes, so long as you select purposeful toys which provide employment on the child's plane at his present range of powers; with aims such as he can, by exercise of these powers, quickly achieve." Such a critic should read chapter iv in *A Montessori Mother*, to secure

evidence that these toys are typical of the employments which infants of three to six will naturally select if they get the chance. Personally, I am not prepared to attach much importance to the view that these employments will make the children in later years more gifted with special powers in "hand and eye".[1] The point rather is that the child, here and now, develops only through employments which give his varied senses room for exercise, at once intellectual and practical.

The silk tablets are a case in point. Some allege that this (very favourite) toy will help the child in later years to a finer power in the discrimination of colours generally. Others say that this is unlikely, since colour in Nature, in dresses, in pictures, &c., is so variable. The point does not seem to me to be important. Our records show, first, that the task of arranging eight shades of eight colours gives intense pleasure and can be successfully achieved; secondly, that it secures sustained attention to a pursuit at once intel-

[1] Compare p. 32 above.

lectual and æsthetic. That suffices to justify its introduction either to the nursery or the infant school. The day before this paper was read it was noted that "T. S." and "E. B." had jointly sorted the 128 tablets in half an hour; few adults could do better.

E.—The Use of Toys or "Gifts" for Symbolic Representation

These records show that the children often show a desire (as with "E. B." mentioned above) to use a toy for purposes other than the quite prosaic purpose for which it is designed. I need not enlarge upon this feature of mental development; it is, indeed, the basis of all fine art, and its application by Froebel to the purposes of school is one of the great merits of kindergarten pedagogy. But children are not desirous of building castles in the air all the time; their intellectual development is also concerned with discriminating differences, arranging facts in sequence, completing a realized purpose. Froebel knew this also, and his Gifts afford some scope

for the prosaic as well as the poetic use of apparatus; Mme Montessori has, however, shown that he had by no means exhausted the possibilities of child activity in this direction.

It must be borne in mind that these children have their afternoons free; when left entirely to themselves they will, no doubt, give scope to the fanciful side of their nature by using bricks and other toys to express their imagery. We have not yet found time (see below) to secure a report of how these children spend their afternoons; but when the need is felt for symbolic and fanciful construction, it can undoubtedly find expression apart from teaching.

F.—Deprivation of Eyesight

This is one of the Montessori devices to which great exception has been taken; for it is argued, rightly enough, that in the ordinary activities of life each of the senses aids the other. And yet it appears likely that the special conditions of modern life tend to make us rely more on the eyesight

than primitive man was prone to do; and hence that we are liable to train our children without giving them fair scope to develop through tactile and motor experience. We therefore devised "spectacles" made of cotton and elastic; each child, for hygienic reasons, has his own, and can use them at will. (They wash them themselves each week.) The records show that many of them, without stimulus, are glad to put on their spectacles; they are especially pleased to watch one another arranging insets or buttons by handling them without seeing. It is merely the reduction of "blindman's buff" to a charming pedagogic exercise! If we recognize thoroughly the importance of the psychology underlying, e.g., O'Shea's *Dynamic Factor in Education*, we shall more readily admit the advantage of measures which limit the attention of the child by shutting his eyes. More than one child has afforded striking evidence on this point. Those who displayed a habit of dreamy inattention were evidently satisfied too readily by looking around; perceptions of sight actually distracted the attention from the

steady control of hands necessary to tie a bow or fasten a button; as soon as eye-sight was cut off this control became possible. Thus, one child spent twenty minutes in listlessly toying with a frame; when his eyes were covered his whole attitude altered, and he became alert and completed the frame in one and a half minutes. Thus concentration, here as in other realms of experience, was only secured by isolation, and at this stage of development the isolation can only be secured on the moto-sensory plane.

G.—Acquirement of Ideas of Number

Many of these toys implicitly involve both order and quantity, and when Grade III is reached the children are ready for addition. We have devised[1] a simple apparatus with envelopes and beans, which greatly attracts the children, so soon as they reach a level where they need the written symbols of number to aid their thought. Here, again, the fact that each child plays independently makes it possible for each

[1] See p. 26 above.

to approach this new and decisive step in experience just when he is ready for it. Our records show that when this stage is reached the child makes rapid progress in mastering the symbols from 1 to 10, both in addition and subtraction; and we anticipate that subsequent progress in the transition class and beyond will be greatly assisted: as to this, however, we need not speculate.

H.—Acquirement of Language Symbols

In the treatment both of number and language the Montessori system is essentially in line with the general principles of reformed teaching, except that as regards letters this system makes use of motor experience far beyond what has been the rule in modern times. Our children do not display at so young an age as those of Italy the desire to master the alphabet, and we have nothing to report analogous to the vivid outbreak of power in writing, such as is narrated from the "Case dei Bambini". Many collateral considerations must

be examined before we can decide how and when to introduce any group of children to letters and words—e.g. the home environment as regards stimulus to such experience greatly affects the question. Our records show that at six years of age most of these children are glad to play letter games—i.e. making up words from cardboard letters. Thus "E.W." is noted on February 26 as spending forty-five minutes making up her own name, and then "my, you, cat, door, wall, chair": the last three being copies of what she "read" pinned against these objects in the room. Further investigation is in process as regards writing, but this has not advanced far enough to reach a definite conclusion.

I.—Domestic Activities

The proceedings at lunch, and other situations where the little ones help to attend to themselves, are quite important, but they are not distinctively Montessorian, and need not detain us in this paper.

These notes on separate topics may now

be summarized in a sentence or two. Our opinion is that a moderate amount of time taken from the kindergarten morning for individual exercises of the Montessori type has been distinctly beneficial. In fact, since children at this age are so impressionable, and show changes in a few weeks which can be plainly recorded, it becomes possible to produce evidence of a decisive kind in favour of this reform with far greater confidence than is possible with reforms proposed for older scholars. It will be noted that I deliberately state this approval in cautious terms; it is sufficient to declare that these children are being decisively assisted in normal development on many sides of their nature.

I venture, in conclusion, to offer advice as to what can usefully be done by teachers who are in sympathy with these principles. First of all, it will be seen that we do not regard it as imperative that a teacher should be exhaustively trained at Rome before venturing to introduce some of this apparatus. I am glad indeed that the Montessori Society is raising funds, and

sending out a few teachers to learn from this most distinguished investigator. No one with a desire for professional knowledge and inspiration could fail to welcome such an opportunity. Every effort, indeed, to enable teachers to study and research is to be commended. Some day it will even be thought worth while to secure funds to enable us to carry on researches in England, after the example of the Lancashire lady to whom the Fielden School owes its foundation.

I am sure also that the students who go to Italy will be encouraged by Mme Montessori to think for themselves—not to copy the details of her plans, but to imbibe the spirit and understand the philosophy. What they bring from their pilgrimage will depend upon what they carry with them to Rome.

Further, we are quite ready to admit that, apart from such direct contact with the original source, it is probable that we may be making mistakes, and expert Montessorians will, likely enough, point out that this report misconceives what is in-

tended in certain particulars. But this need cause no great anxiety; sufficient has now been published on the subject to enable us to grasp the essential principles; to apply these we need to study the manifestations of child nature at first hand, and then rely upon our own trained judgment; this is needed as much as fidelity to an original. Thus equipped, I should counsel an infant or kindergarten teacher to try first what her little ones make of the frames and one or two other toys of the First Grade. If these are given a fair trial with a few children, then a teacher can with more confidence investigate further, as the Fielden School is now doing. I deprecate entirely the effort made in America to foist the whole sixty-dollar equipment on an ordinary public school straight away. And if this has been done by Mme Montessori's injunction, I must quite clearly disagree with her opinion as a matter of practical wisdom. Secondly, I agree with Mrs. Fisher that this is a reform which concerns the parent and the nursery as much as the teacher and the classroom. Doubtless a

thorough mastery of the psychology and the physiology is required for a perfect handling of this as of any other complete educational scheme; but we need not be too timid in making practical acquaintance with these principles of child nature. One of the signal advantages of this system lies in our being compelled to treat each child as an individual. This is what parents, rather than class teachers, can do, and I am convinced that it is worth while to try to explain to parents how educative toys of the Montessori type can be introduced to the nursery. We have in mind to plan a course for parents and governesses, with children younger than the ordinary school age, in order to find out, first, whether at the age of three to four these educative toys can serve with English children; secondly, whether parents and governesses, after witnessing the way in which the toys are used, can be induced to help their little ones at home on similar lines. It will be recognized that this appeal to parents is in line with many other efforts towards educational reform,

since the day when Pestalozzi published *Lienhard und Gertrud.*

Finally, let no one undertake to introduce even a fragment of Montessori apparatus into a school without being prepared for some novel and fatiguing experience. I noted above that our teachers at 9.30 sit down and write notes about the children instead of talking to them, and this might be supposed to be an easy job. But although there are sometimes two, or even three, teachers observing only some fifteen to twenty children, they tell me that the work is far harder than collective class management. And I can well believe it, for it is harder to observe a small number of individuals than to direct a company as one man. A very subtle art is demanded —viz. to suggest to these children that they are "free", while affording, through the teacher's foresight, the necessary minimum of guidance and control. And if this were an occasion for expressing thanks, my audience as well as the lecturer would wish to express our indebtedness to Miss Steel.

But, whatever the strain may be at first, I have no hesitation in affirming that the organization by teachers of individual child study, such as we are compelled by this mode of schooling to undertake, will lead the way to far-reaching reforms, both in the training of teachers and in child psychology. For one of the most difficult problems in training colleges has been to organize a systematic procedure for our students analogous to that undertaken by students in other professions. Mme Montessori, like all her predecessors from the days of Pestalozzi, has laid the foundations of her method on the detailed observation of individual cases; and where the masters have led the disciples must follow.

CHAPTER III

MONTESSORI WITH VERY YOUNG CHILDREN

As noted above, p. 77, our study of the Montessori apparatus in the Fielden School had led us to seek further light on two problems for which the ordinary school arrangements do not provide, and the following circular was accordingly issued (it may be interesting to note by the way that it was printed by scholars in the Upper Department on our hand press; see *Demonstration School Record*, No. II, p. 108):—

COURSE FOR LITTLE CHILDREN WITH MONTESSORI APPARATUS

The Fielden School Committee have sanctioned the above Course, providing a sufficient number of applications are received.

The Course will be held on Tuesday and Thursday afternoons, and will be conducted by Miss K. Steel, N.F.U., the Senior Mistress of the Fielden School (Primary Department).

The Course will run from Tuesday, April 8th, to Thursday, July 17th, from 2.30 to 4 o'clock.

The fee will be 5*s.* for those children whose families are already represented in the school, and 10*s.* for others.

It is the intention of the Course to enable parents or governesses to help the little ones in the education carried on in the nursery. For the first lesson or two Miss Steel will prefer to have the children alone, but as soon as they are used to the change it is important that the parents and governesses should be present, and occasion will be taken from time to time to explain the purpose of these educative toys.

We recommend parents to read the following book dealing with the subject: *A Montessori Mother*, by Dorothy Fisher, published by Constable (4*s.* 6*d.*).

The applications should be made to Miss Steel, The Fielden School, Victoria Park, Manchester, who will be pleased to give any further information about the matter.

March,

The response was small, but just sufficient to enable Miss Steel to undertake the task: two were little boys of four, who had just entered the F. S. morning Kindergarten and came back for this extra time, the other six only attended on these two afternoons; two of them came several

miles in a motor car in charge of mother or governess.

As before, Miss Steel kept a detailed report, extending from April 15 to July 10, and the salient points are here reproduced.

Average age: 3 years 8½ months; two under 2½ years, three of 3½ years, the rest 4 to 5 years old.

For the first three afternoons no parents or nurses were admitted, in order to enable the children to get acquainted with their new environment and their new friends without interruption. Afterwards these and other visitors were freely welcomed: while their presence made a considerable claim on the attention of the teachers, it was no hindrance to the children, who are absorbed in their own pursuits, and are not disturbed by the presence of strangers, so long as these do not "interrupt".

The children found laid out in the room a supply of the frames and other educative toys; there were also available dolls' furniture, and other ordinary nursery toys. They played with these last a good deal on the first afternoon, but by the third afternoon

they found more interest in the Montessori toys, and subsequently always "went for" these without taking any notice of the nursery toys.

At first "the little ones hardly spoke to each other, did not attempt to play together, and seemed to wait for *us* (the teachers) to play with them". This last accords with the picturesque description by Mrs. Fisher of an American child, "a beautiful, exquisitely attired little fairy of four, whose lovely healthful body had been cared for with the most scientific exactitude by trained nurses, governesses, and nursemaids; the very springs of her natural initiative and invention seemed to have been broken by the debilitating ministrations of all these caretakers. . . . She was given a choice of geometric insets, and provided with coloured pencils and a big sheet of paper, baits which not even an idiot child can resist, and sitting uninventive before this delightful array, remarked with a polite indifference that she was used to having people draw pictures for her." (*A Montessori Mother*, pp. 42–3.)

We had no extreme case of this apathetic type, and the more timid children soon imitated the activity of the others.

After the first week a regular procedure was established as follows: The teachers began by singing with the children a short greeting song, and then left them to play with the toys; after half an hour or longer they went out into the garden, where hens and chickens proved of great interest.

Here in passing it may be noticed how much can be done at small expense or trouble to provide little children with an important field of experience in connection with living creatures. A broody hen, a sitting of fertile eggs, and a hencoop can be placed in any back garden or school playground in the springtime at the cost of a few shillings; and if the elders do not want to rear the chickens they can be sold at profit a month later.

The excursion out-of-doors presented quite a natural motive for mastering the Frames, since the children had to change from slippers to boots. Further, it pro-

vided a resource against weather difficulties: on an oppressively close afternoon the toys were not attacked with eagerness; little children are more at the mercy of the weather than older folk should be; hence on such a day early release to the garden and for a longer period was welcome.

After such an interval in the garden the children were glad to return to the room, each taking up again the toys for the hour or less which remained until 4 o'clock. Advantage was taken of the opening weather to provide gymnastic apparatus as recommended by Madame Montessori and described by Mrs. Fisher (*A Montessori Mother*, pp. 113–5). It proved entirely satisfactory and can be recommended with confidence to mothers who have a few spare yards of garden space at disposal. During the last six weeks one very fine afternoon the tables and toys were taken out by children and teachers together to the grass where this gymnastic apparatus had been fixed, so that the time was entirely spent in the open air, and when any child wished, he could punch the ball, or swing,

or walk on the tight-rope, instead of playing with insets, &c., as before.

Results

By having mothers and governesses constantly visiting the class we were able to secure their reports on the effect of these experiences. This was most valuable, since the teachers, having no previous knowledge of these children's disposition, could not be expected in so short a time to witness the full effect.

These reports were decisive and unanimous: the features described in Chapter II were manifest in all cases; that is to say, these children have begun to rely upon themselves; they are able to play alone at home, occupied busily for half an hour at a time without worrying an elder person to amuse them every few minutes. This was as true of the 2–3-year-olds as of those of 4–5 years: indeed, there seems to be no reason why a normal child, as soon as it can walk and talk, should not be provided with the First Grade of these toys and shown how to use them.

In every rank of society the problem of occupation for the little child is the same: mind and body both demand an *object* for attention, and the elder person—mother, sister, or hired nurse—is called upon to provide this. Now if the object merely attracts the eye or the hand for the moment, and has "nothing in it" as we say, then it is practically unserviceable, because the elders must be incessantly answering demands for new objects; it is at the same time educationally useless, because if there is nothing in it, nothing will be gained by the child by way of enlarging experience.

Miss Steel's notes show that this fundamental point was not apparent during the first week or two: the children, that is to say, had only possessed useless toys, had only been accustomed to be superficially amused with such toys; it took them a little time to find out their own powers, to discover that there was anything which it was worth while to attend to and be absorbed about.

A little reflection upon the amusements and occupations of adults will show how

quite fundamental this situation is. Most of our modern amusements are adapted to people who behave like butterflies: the titbit of the newspaper, the short story, the rapid turn of a music hall, and the still more rapid changes of the cinema are methods exactly adapted to a civilization which has educated (*sic*) its children to require dissipation. Such an adaptation is not according to nature, i.e. according to the real needs and powers of normal capacity, but is a perversion. Here is, e.g., A.P., who in April was only happy when bothering his mother to help him to be amused: in July, without any pressure or exhortation, he is more happy and contented with educative toys which keep his attention, naturally and profitably, for half an hour at a time. This is fundamental, not only because here and now A.P. is living a more rational life, but because he is forming habits, motor and intellectual, which at this plastic period will govern his entire disposition.

It will be noted that this investigation had two objects in view: the first, to see whether

children of the youngest age could be profitably introduced to Montessori apparatus; the second, to see how far parents, nurses, and governesses could be interested and could effectively share in these endeavours to promote their children's welfare.

On this second point our experience points to a few definite conclusions. Firstly, intelligent mothers can in a few weeks come to realize the general principles of independence and initiative—principles which sensible and busy mothers have always recognized, but nowadays find it increasingly difficult to put into practice. By bringing them together with the teachers and the children, letting them notice the difference in behaviour between one child and another, studying the relation of cause and effect, they rapidly acquire the right point of view and transfer this to the home life.

This does not, however, lead them to feel independent of the teacher and the school; on the contrary, they are only too anxious to secure further help and guidance, both for themselves and for their little ones.

The case of nurses and governesses is

more complicated: these good folk are inclined at first to think that their occupation is gone! all such people are inclined to enjoy doing things *for* their charges; they judge of their own success in terms of immediate external result—the "good" child is the one who is willing to be washed and tidied and amused to any extent *by them*; the educative process does not appeal to them; they are inclined to treat it, in fact, just as many schoolmasters treat educational theories. It is not likely, therefore, that any ordinary nurse or governess will make much of "Montessori", unless a distinct and formal effort is undertaken by way of training; i.e. time and care must be expended to enable such persons to think out for themselves the grounds on which these reforms are based.

CHAPTER IV

SUGGESTIONS FOR FURTHER STUDY

The immediate purpose of this little book has been fulfilled, in recording the successive stages of this investigation, with the comments and conclusions which have occurred to us while we have been engaged upon it. It is for the reader to consider how the benefit of Madame Montessori's work can be adapted and extended amid our varied conditions of educational activity in England and America.

We make a few suggestions based on our experience during the past session.

I. Although the principles issue in a situation where children and toys are left to their own devices, this by no means implies that a successful result can be achieved without any help from older folk. Some method of study is necessary.

II. Such study must be at once theoretical and practical—the practice and observa-

tion being best secured in a school class where scope and freedom is permitted both to children and to their teachers. The study of principles and theory then follows readily, since the behaviour and reactions of the children provide questions which the writings of Madame Montessori and others will interpret.

III. Hence, before the attempt is made to introduce "Montessori" into any kindergarten or Infant school, the teachers who are asked to do this should have resorted to some institution or school where opportunities for such study are afforded.

IV. These opportunities should be provided, as we have sought to do in Manchester, in the Practice or Demonstration Schools now attached to all Training Colleges. Such schools make it their business to associate the investigation of new principles with the daily life of children in school classes, and possess resources for the critical study of these principles such as are not available in the ordinary public schools.

V. This Training College work should be conducted with scientific care and

thoroughness, pains being taken to record in detail the changes in individual children week by week, so that teachers and students engaged in learning the system will not only learn details of procedure, but secure evidence at first hand of the benefits actually received by children. Only by studying a few children in this painstaking fashion can the practitioner gain a well-grounded confidence in her own powers, and a discernment of the real factors at work in child development.

VI. After a number of students and teachers have gained in these institutions a fair familiarity with the new ideas and methods, it will then be possible for school authorities to ask that they be adopted more widely; until that time has come it would be premature to urge any hasty alteration in the present procedure of Infant schools or kindergartens: to do so would only bring into contempt one of the most important pedagogic researches of the present century.

VII. This delay does not, however, mean

that there should be any hindrance placed in the way either of teachers, parents, or governesses who, of their own motion, study the principles and desire to apply them, as best they may, to the children immediately in their charge either in the home or in the schoolroom.

Note on the Value of Montessori Methods for Backward or Defective Children.—Last February a defective child, S. B., seven years old, was admitted to the school under the special direction of a physician. He was clearly deficient and could not be received in any ordinary school, for he would disturb collective teaching; it was found possible, however, to place him with us in the special charge of a senior student, who with Miss Steel has kept a continuous record of his behaviour from February 21 to July 1. The child is at home in charge of an intelligent and sympathetic step-mother: his progress has been definite although very slow. The educative toys seem almost indispensable for such a case, as they provide the simplest form of intel-

lectual exercise—they were discovered by Madame Montessori in her earlier practice with Italian defectives.

We accepted S. B. as a pupil in order to judge how far it is possible for such a subject to remain in a school for normal pupils. Clearly, if the defects are such as lead the subject actively to interfere with his fellows he cannot be received; but if his disposition is gentle, and if it is possible to keep him occupied quietly for a reasonable time, then it may often be better to let him remain in normal society. For the influence and example of others is an important gain; and it is no harm to normal children to have one among them whose condition obviously appeals to their sympathy and regard.

Now, in the collective teaching of a class, the pressure of a backward or defective pupil is a grave hindrance, since, if he is to make any progress, all the rest must be stopped in the endeavour to meet his needs; but under Montessori conditions he can go his own pace, and any help he receives from his comrades will be the outcome of in-

dividual kindness and sympathy, similar to that which he may receive from benevolent friends outside the school walls.

APPENDIX

We found the need for a few additional toys other than the Montessori apparatus, so we have gradually invented some of our own.

Plaiting Frame.—Many of our children have their hair plaited, which "Mother always does!" So we thought it time they did it themselves. After some experimenting we found that horse hair would serve our purpose. We had then to consider how to attach it to the frame. We experimented with machining it on, but the hairs were too small to be attached. We noticed that glue is used in making hair brushes, so with the help of glue and the sewing machine we have made three plaiting frames, and very fascinating they looked with the plaits tied up with coloured ribbons! The children use them constantly.

Buttoning Frames.—Thick overcoats were

rather difficult for children to button; so a friendly tailor has made us a frame of serge with rather stiff buttons, and also another frame with the flap over the buttons, so that the little boys can button their knickers correctly.

Lacing Frame.—The lacing frame in the Montessori set of apparatus we found a little difficult for the children, and they could not manage it; so we had one made by a shoemaker, with studs, "just like Father's boots!" as a small boy said. We also found the bootlaces difficult to tie, though possibly the bow might have been accomplished in ribbon; so a *tying frame composed of two different-coloured* bootlaces we found most helpful and much used by the children: the different colours are a great help in the manipulation of tying the bow.

Games for Discrimination of Size.—Another toy we thought of to help the tactile sense was a piece of wood with half knitting needles stuck in as spikes, and made secure. A bag containing wooden button moulds with holes bored through

went with this toy. The child feels in the bag for the buttons, and is required to put the correct size on the different spikes without looking at the button he brings out of the bag. We have the same game with different-sized linen buttons: these are felt and the different sizes put into groups or in small compartments in a cardboard box. We found this game such a pleasure to the children that we collected different kinds of seeds, and three sets of these were arranged.

1. Two kinds of seeds (large).
2. Three kinds of seeds (large and small).
3. Four kinds of seeds (various sizes).

Empty boxes are provided, and the game here consists in sorting the seeds into their right "homes".

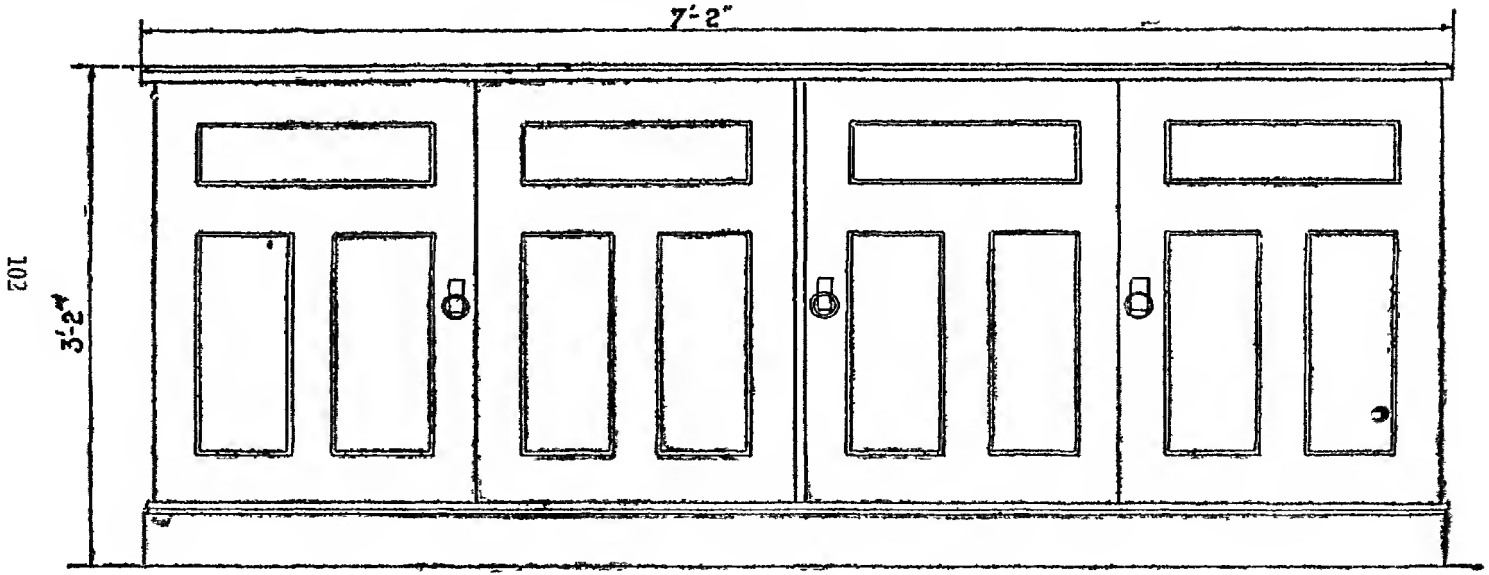
Number.—Need was felt for more toys to help in acquiring number, so the children made dominoes with coloured paper, matching the colours with the prism colours, of which a sample is always displayed. Later on they wanted the symbols—so these

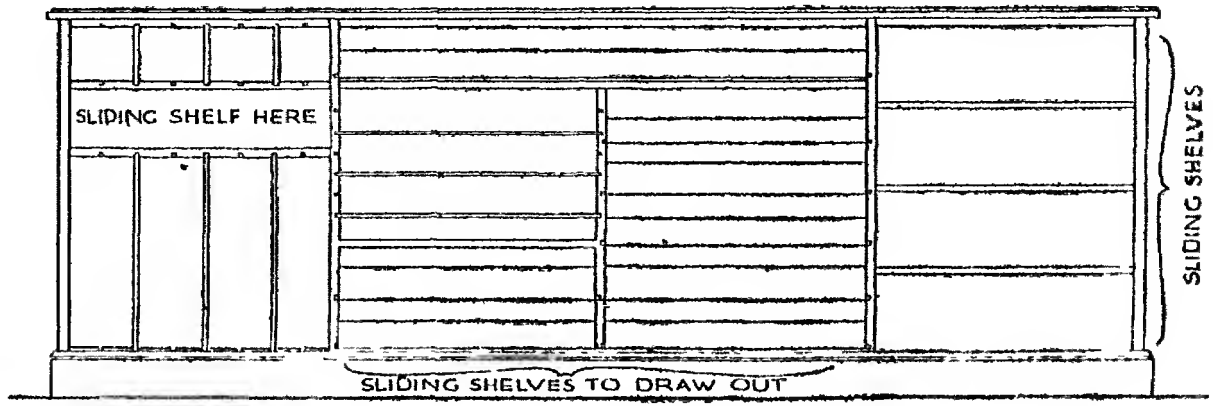
were made by them, and morning after morning these dominoes were favourite toys. Then we thought of another *number game*—which we called the "counting game"—made of envelopes having numbers "printed" on the outside. *First step* has envelopes with numbers 1 to 10. The exercise is to fill the envelopes in order 1 to 10 with large seeds, one seed in envelope 1, two seeds in envelope 2, and so on. *Second step*, envelopes with two numbers (additions of numbers to 10). Each envelope has two numbers written on it, thus: [2|5]. The child will put seven seeds in this envelope. Thus the child discovers, whilst putting in two beans and then five beans that 2 and 5 make 7. *Third step* has Step 1 envelopes arranged on a table in their right order: 1 to 10. The child places all the additions of various numbers underneath their right number. The children took much pleasure in this game and it was popular with them.

The Montessori Cupboard.—We found it somewhat difficult to arrange the apparatus in an ordinary cupboard, so one was de-

signed with care to contain all the material. As can be seen from the drawings (pp. 102–3), the cupboard is divided into four separate compartments, into which all the apparatus is put according to the four grades mentioned in *The Montessori Method*. The special condition fulfilled by the designer was to make the shelves, partitions, &c., so that little children can take out and replace what they require without disorder.

THE MONTESSORI CUPBOARD

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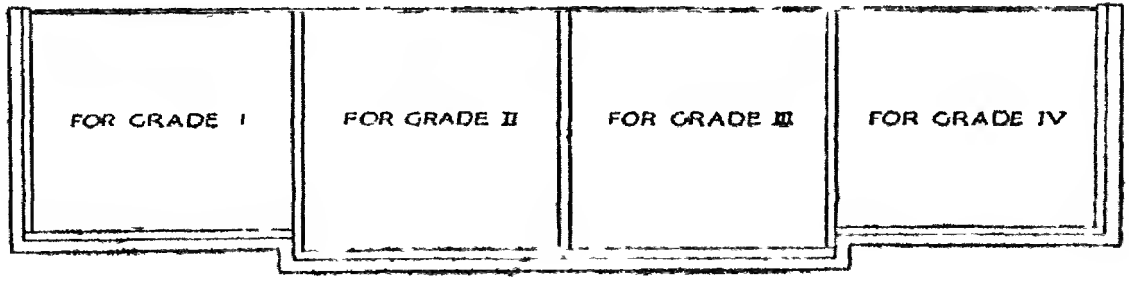
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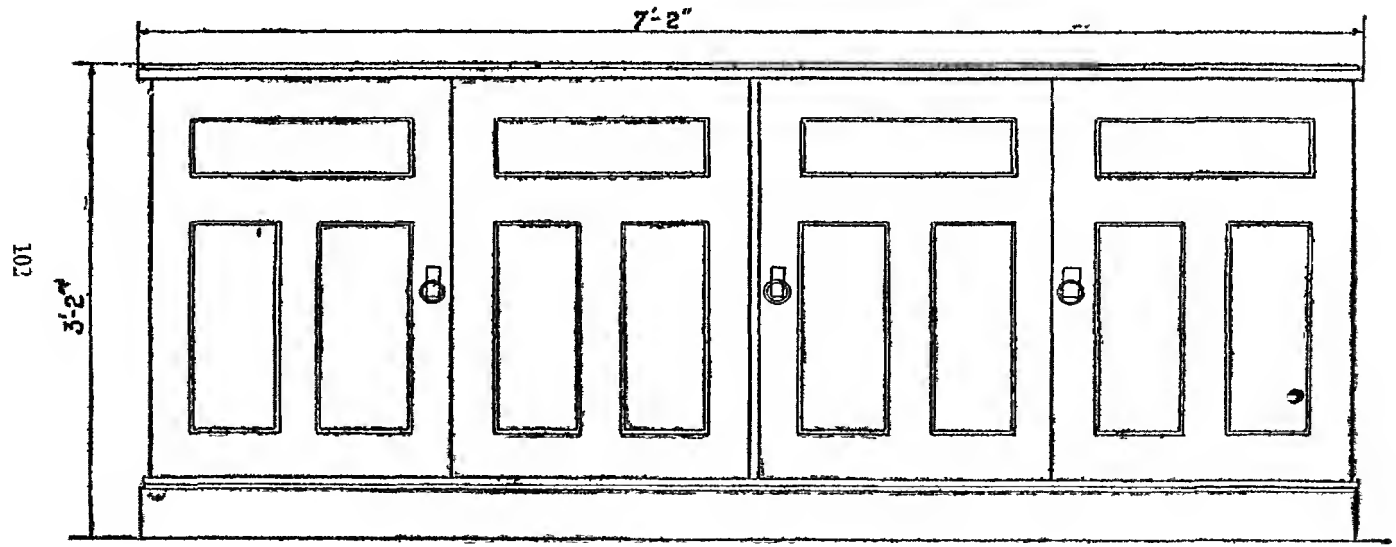
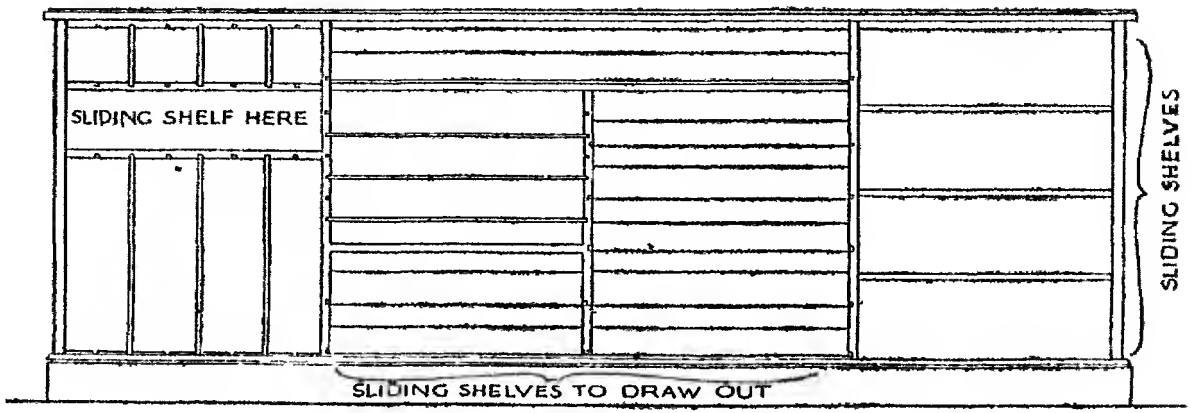
THE MONTESSORI CUPBOARD

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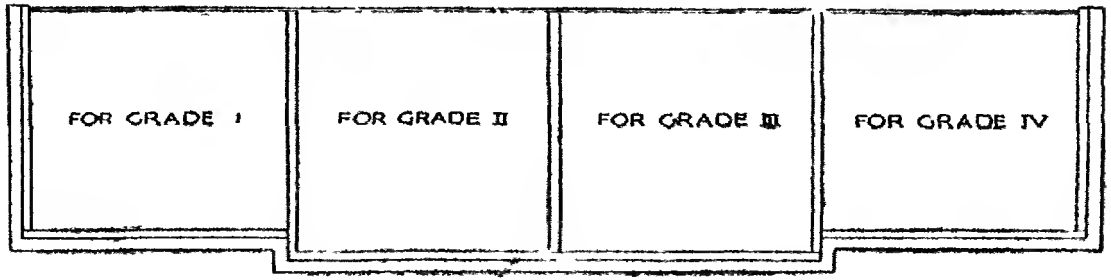
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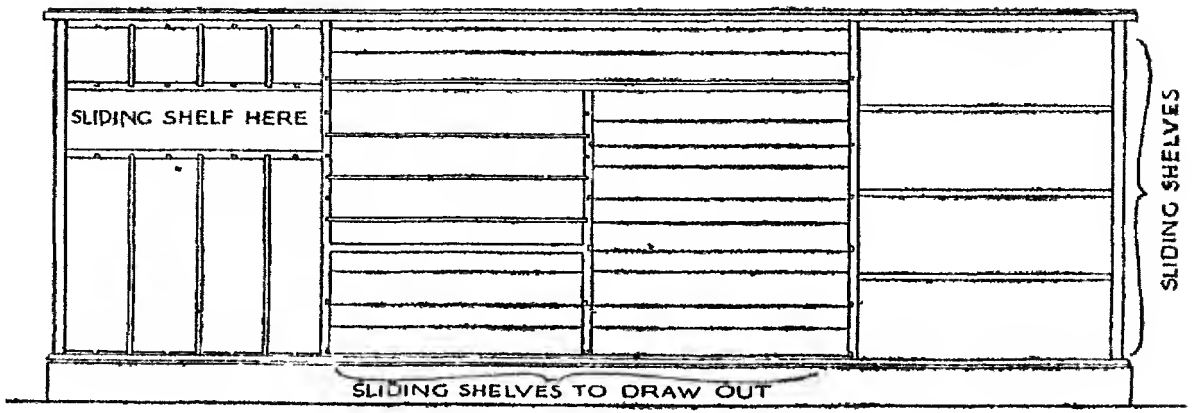
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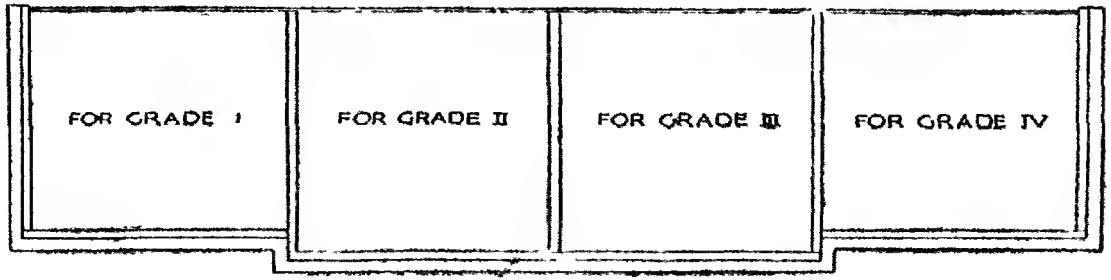
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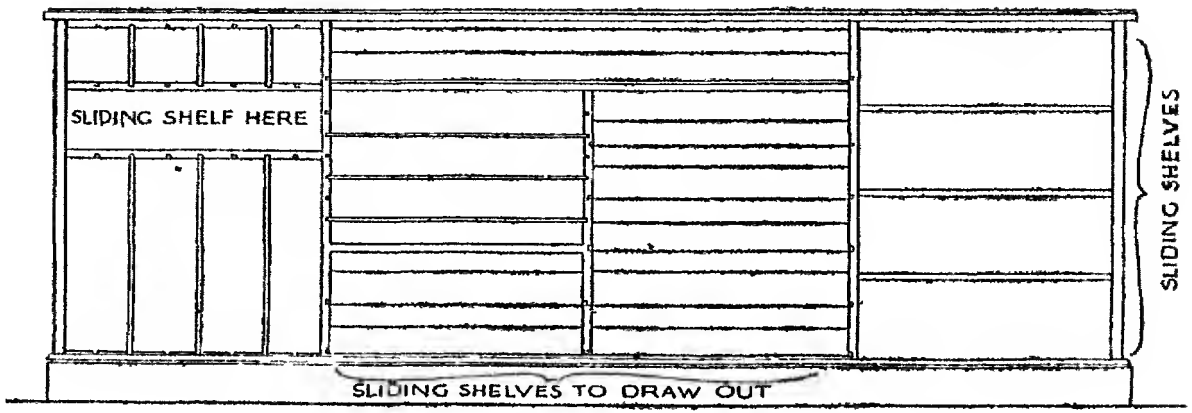
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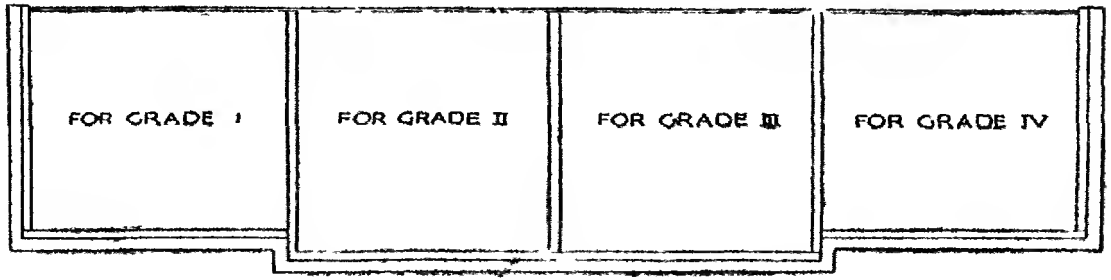
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